

CLAIMS:

1. Circuit for a lamp, comprising:
 - a first sub-circuit for connecting to mains voltage of a predetermined frequency for rectifying the mains voltage;
 - a second sub-circuit connected to the first sub-circuit for providing an alternating current required for the lamp; and
 - a control circuit which is connected to the first and the second sub-circuit and which controls the frequency of the alternating current subject to a varying component of the mains voltage rectified by the first sub-circuit.
- 10 2. Circuit for a lamp as claimed in claim 1, wherein the first sub-circuit comprises a filter with one or more coils and capacitors, a rectifier circuit, an (electronic) switch and a buffer capacitor that is coupled to its output terminals.
- 15 3. Circuit for a lamp as claimed in claim 1 or 2, wherein the second sub-circuit comprises a converter circuit for stabilizing direct current and a switching device for providing a square-wave current of a desired level of for instance +/-0.8 A for normal operation of the lamp.
- 20 4. Circuit for a lamp as claimed in claim 1, 2 or 3, wherein the control circuit is connected on one side to an (electronic) switch in the first sub-circuit and on the other side to one or more (electronic) switches in the switching device, so that the phase and/or frequency of the lamp current controlled by the switching device is controlled subject to a varying component of for instance 50 Hz or a multiple thereof (in the USA and Japan 60 Hz or a multiple thereof).
- 25 5. Circuit for a lamp as claimed in claims 1-4, wherein the frequency of the alternating current provided by the second sub-circuit is made equal to a varying component of the mains voltage rectified by the first sub-circuit.

6. Circuit for a lamp as claimed in claims 1-5, wherein the control circuit controls the phase of the alternating current provided by the second sub-circuit such that this is the same as the phase of a varying component of the rectified mains voltage supplied by the first sub-circuit.

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7. Circuit for a lamp as claimed in claims 1-6, wherein the second sub-circuit comprises an igniter for generating voltage pulses across the lamp so as to ignite the lamp.

10 8. Circuit for a lamp as claimed in claims 1-7, wherein the rectified mains voltage is in the order of magnitude of 400 V and the voltage across the lamp is in the order of magnitude of 100 V to 150 V.

9. Circuit for a lamp as claimed in claims 1-8, wherein the varying component of the rectified mains voltage has a peak-to-peak value in the order of magnitude of 10-100 V.

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10. Method for operating a lamp, comprising the steps of:
- rectifying a supplied mains voltage and bringing it to a desired voltage level;
and
- generating an alternating current;

20 wherein the frequency of the alternating current is controlled subject to a varying component of the rectified mains voltage.

25 11. Method for operating a lamp as claimed in claim 10, wherein the phase of the alternating current is equal to the phase of the varying component of the rectified mains voltage.